

PHYTOMORPHOLOGY

AN INTERNATIONAL JOURNAL OF PLANT MORPHOLOGY

OFFICIAL ORGAN OF
THE INTERNATIONAL SOCIETY OF PLANT MORPHOLOGISTS

VOLUME 12

1962

NUMBERS 1-4

P. MAHESHWARI, Editor

University of Delhi

Delhi 6, India

QK
1
P586

ADVISORY BOARD

R. W. BAXTER University of Kansas, Lawrence, Kansas, U.S.A.

P. R. BELL University College, London W.C.1, England

N. BOKE University of Oklahoma, Norman, Okla., U.S.A.

TH. ECKARDT Institut für systematische Botanik und Pflanzengeographie der freien
Universität Berlin, Berlin-Dahlem

K. ESAU Department of Biological Sciences, University of California, Santa
Barbara, Calif., U.S.A.

P. OZENDA Institut de Botanique, Grenoble, France

W. R. PHILIPSON Canterbury University College, Christchurch, C.I., N.Z.

J. PROSKAUER University of California, Berkeley, Calif., U.S.A.

T. A. STEEVES University of Saskatchewan, Saskatoon, Saskatchewan, Canada

R. H. WETMORE Harvard Biological Laboratories, Cambridge 38, Mass., U.S.A.

Annual Subscription : Rs 38 (India); £3 10s or \$ 9.85 (Foreign)

CONTENTS

PAGE

The effects of gibberellic acid on morphogenesis in <i>Marsilea drumondii</i> A. Br.	A. ALLSOPP	1
The origin and development of apogamous structures in the gametophyte of <i>Pteridium</i> in sterile culture	D. P. WHITTIER	10
The form and development of knee roots in <i>Mitragyna stipulosa</i> J. McCARTHY		20
A theory of paedomorphosis in dicotyledonous woods	SHERWIN CARLQUIST	30
Studies in the family Ranunculaceae—II. The female gametophyte of <i>Clematis gauriana</i> Roxb.	M. R. VIJAYARAGHAVAN	45
On <i>Botryocladia skottsbergii</i> (Boergs.) Levr.—A red alga new to Indian region	K. S. SRINIVASAN	49
Morphological and ontogenetic studies in palms— I. Development of the plicate condition in the palm-leaf	K. PERIASAMY	54
Post fertilization study on <i>Moringa oleifera</i> Lamk—A reinvestigation	H. S. NARAYANA	65
Studies in the family Ranunculaceae— III. Development of the female gametophyte in <i>Adonis annua</i> L.	N. N. BHANDARI	70
A new dioecious macrandrous species of <i>Bulbochaete</i>	ELLA A. GONZALVES	74
Studies on Indian Cryptonemiales— II. <i>Corynomorpha</i> J. Ag.	M. S. BALAKRISHNAN	77
Irregular morphological development in hybrid ferns	WARREN H. WAGNER JR.	87
Review (of "Fluctuations in Mitotic Index in the Shoot Apex of <i>Lonicera nitida</i> .")	NORMAN H. BOKE	101
Review (of "Proceedings of the Symposium on Algology, 1960.")	V. P. SINGH	101
Embryology of <i>Liriodendron tulipifera</i> L.	MARGARET KAEISER & STEPHEN G. BOYCE	103
The development of the primary vascular system of certain dicotyledons	E. E. BALFOUR & W. R. PHILIPSON	110
Studies on the floral histogenesis and physiology of <i>Perilla</i> — I. Quantitative analysis of flowering in <i>P. frutescens</i> (L.) Britt.	WILLIAM P. JACOBS & V. RAGHAVAN	144
Studies in the Capparidaceae—I. The embryology of <i>Capparis decidua</i> (Forsk.) Pax.	H. S. NARAYANA	167
Cytology and embryology of the Rutaceae	SHARDA DESAI	178
Polyembryony in <i>Xanthoxylum</i> Mill.	SHARDA DESAI	184
Investigations on the development of the male cones in <i>Fitzroya cupressoides</i> (Mol.) Johnst. and <i>Pilgerodendron uviferum</i> (Dom.) Flor.	R. N. KONAR	190
Some observations on the life history of <i>Pinus gerardiana</i> Wall.	R. N. KONAR	196

	PAGE
Anatomical studies on fungal galls — I. Preliminary observations on <i>Physo-</i> <i>derma</i> on <i>Limnanthemum indicum</i> Thw. C. G. PRAKASA RAO	201
Review (of "The Algae.") V. P. SINGH	205
Morphology and embryology of <i>Piper nigrum</i> L. KUSUM KANTA	207
Gametogenesis and seed development in <i>Ainsliaea aptera</i> DC. R. N. KAPIL & S. BALA SETHI	222
Development of seed in <i>Tridax trilobata</i> Hemsl. R. N. KAPIL & S. BALA SETHI	235
The ontogeny of the stomata in <i>Schisandra grandiflora</i> Hook. F. & Thoms. S. JALAN	239
Morphology and embryology of <i>Gnetum gnemon</i> L. MADHULATA SANWAL	243
The Schizaeaceae: The gametophyte of <i>Anemia</i> LENETTE R. ATKINSON	264
Homologies in the grass embryo — A reevaluation M. NEGBI & D. KOLLER	289
The primitiveness of polycotyledony considered with special reference to the cotyledonary condition in Podocarpaceae DAVID J. DE LAUBENFELS	296
Tissue culture studies on <i>Vicia faba</i> L. I. Establishment of culture S. VENKETESWARAN	300
Embryological studies in the Loasaceae: Development of endosperm in <i>Blu-</i> <i>menbachia hieronymi</i> Urb. V. GARCIA	307
Embryogeny of conifers: A Review CHHAYA ROY CHOWDHURY	313
Studies on the root parasitism of <i>Exocarpus bidwillii</i> Hook. F.—I. Ecology and root structure of the parasite B. A. FINERAN	339
A reinvestigation of the endosperm and endothelium in <i>Tridax procumbens</i> D. PADMANABHAN	356
A contribution to the embryology of <i>Ephedra gerardiana</i> Wall. HARDEV SINGH & KAMLA MAHESHWARI	361
A contribution to the life history of <i>Biota orientalis</i> Endl. HARDEV SINGH & Y. P. OBEROI	373
The sporogenous meristems of ferns: A morphogenetic commentary C. W. WARDLAW	394
Stomatal development in some Magnoliaceae G. S. PALIWAL & N. N. BHANDARI	409
Biosystematic studies on the <i>Axonopus compressus</i> complex: A new subspecies in West Africa D. GLEDHILL	412
Embryological studies in the family Zingiberaceae I. <i>Costus speciosus</i> Smith M. G. PANCHAKSHARAPPA	418
Review (of "Proceedings of the Summer School in Botany, Darjeeling, 1960.") R. N. KAPIL	431
Review (of "Die Evolution der Angiospermen.") V. PURI	432
Review (of "Practical Mycology.") P. MAHESHWARI	433
Review (of "Phykos, Journal of the Phycological Society, India.") V. P. SINGH	433
Review (of "The Clavariaceae of India.") HARDEV SINGH	433
Review (of "Aquatic Angiosperms.") R. N. KAPIL	434

INDEX OF AUTHORS

PAGE

ALLSOPP, A. The effect of gibberellic acid on morphogenesis in <i>Marsilea drumondii</i> A. Br.	1
ATKINSON, LENETTE R. The schizaeaceae: The gametophyte of <i>Anemia</i> ...	264
BALAKRISHNAN, M. S. Studies on Indian Cryptonemiales — II. <i>Corynomorpha</i> J. Ag.	77
BALFOUR, E. E. The development of primary vascular system of certain dicotyledons	110
BHANDARI, N. N. Studies in the family Ranunculaceae — III. Development of the female gametophyte in <i>Adonis annua</i> L.	70
BHANDARI, N. N. (see PALIWAL, G. S.)	
BOKE, NORMAN H. "Fluctuations in Mitotic Index in the Shoot Apex of <i>Lonicera nitida</i> ." (Review)	101
BOYCE, STEPHEN G. (see KAEISER, MARGARET)	103
CARLQUIST, SHERWIN A theory of pedomorphosis in dicotyledonous woods ...	30
CHOWDHURY, CHHAYA ROY Embryogeny of conifers: A Review ...	313
DESAL, SHARDA Cytology and embryology of the Rutaceae	178
— Polyembryony in <i>Xanthoxylum</i> Mill.	184
FINERAN, B. A. Studies on the root parasitism of <i>Exocarpus bidwillii</i> Hook. F. — I. Ecology and root structure of the parasite ...	339
GARCIA, V. Embryological studies in Loasaceae: Development of endosperm in <i>Blumenbachia hieronymi</i> Urb.	307
GLEDHILL, D. Biosystematic studies on the <i>Axonopus compressus</i> complex: A new subspecies in West Africa... ..	412
GONZALVES, ELLA A. A new dioecious macrandrous species of <i>Bulbochaete</i> ...	74
JALAN, S. The ontogeny of stomata in <i>Schizandra grandiflora</i> Hook. F. & Thoms.	239
JACOBS, WILLIAM P. Studies on the floral histogenesis and physiology of <i>Perilla</i> — I. Quantitative analysis of flowering in <i>P. frutescens</i> (L.) Britt.	144
KAEISER, MARGARET Embryology of <i>Liriodendron tulipifera</i> L. ...	103
KANTA KUSUM Morphology and embryology of <i>Piper nigrum</i> L. ...	207
KAPIL, R. N. "Proceedings of the Summer School in Botany, Darjeeling, 1960" (Review)	431
— "Aquatic Angiosperms" (Review)	434
— Gametogenesis and seed development in <i>Ainsliaea aptera</i> DC....	222
— Development of seed in <i>Tridax trilobata</i> Hemsl.	235
KOLLER, D. (see NEGBI, M.)	
KONAR, R. N. Investigations on the development of male cones in <i>Fitzroya cupressoides</i> (Mol.) Johnst. and <i>Pilgerodendron wuiferum</i> (Dom.) Flor.	190
— Some observations on the life history of <i>Pinus gerardiana</i> Wall. ...	196
LAUBENFELS, DAVID J. DE The primitiveness of polycotyledony considered with special reference to the cotyledonary condition in Podocarpaceae ...	296

MCCARTHY, J. The form and development of knee roots in <i>Mitragyna stipulosa</i>	20
MAHESHWARI, KAMLA (see SINGH, HARDEV)	361
MAHESHWARI, P. "Practical Mycology" (Review)	433
NARAYANA, H. S. Post fertilization study on <i>Moringa oleifera</i> Lamk. — A reinvestigation	65
— Studies in the Capparidaceae — I. The embryology of <i>Capparis decidua</i> (Forsk.) Pax.	167
NEGBI, M. Homologies in the grass embryo — A reinvestigation	289
OBEROI, Y. P. (see SINGH, HARDEV)	
PADMANABHAN, D. A reinvestigation of the endosperm and endothelium in <i>Tridax procumbens</i>	356
PALIWAL, G. S. Stomatal development in some Magnoliaceae	409
PANCHAKSHARAPPA, M. G. Embryological studies in the family Zingiberaceae I. <i>Costus speciosus</i> Smith	418
PERIASAMY, K. Morphological and ontogenetic studies in palms I. Development of the plicate condition in the palm-leaf	54
PHILIPSON, W. R. (see BALFOUR, E. E.)	
PRAKASA RAO, C. G. Anatomical studies on fungal galls—I. Preliminary observations on <i>Physoderma</i> on <i>Limnanthemum indicum</i> Thw.	201
PURI, V. "Die Evolution der Angiospermen" (Review)	432
RAGHAVAN, V. (see JACOBS, WILLIAM P.)	144
SANWAL, MADHULATA Morphology and embryology of <i>Gnetum gnemon</i> L.	243
SETHI, S. BALA (see KAPIL, R. N.)	222
— (see KAPIL, R. N.)	235
SINGH, HARDEV "The Clavariaceae of India" (Review)	433
— A contribution to the embryology of <i>Ephedra gerardiana</i> Wall.	361
— A contribution to the life history of <i>Biota orientalis</i> Endl.	373
SINGH, V. P. "Proceedings of the Symposium on Algology, 1960" (Review)	101
— "The Algae" (Review)	205
— "Phykos, Journal of the Phycological Society, India" (Review)	433
SRINIVASAN, K. S. On <i>Botryocladia skottsbergii</i> (Boergs.) Levr.—A red alga new to Indian region	4
VENKETESWARAN, S. Tissue culture studies on <i>Vicia faba</i> L. I. Establishment of culture	300
VIJAYARAGHAVAN, M. R. Studies in the family Ranunculaceae—II. The female gametophyte of <i>Clematis gauriana</i> Roxb.	45
Wagner JR, Warren H. Irregular morphological development in hybrid ferns	87
WARDLAW, C. W. The sporogenous meristems of ferns: A morphogenetic commentary	394